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Marc Feissel
Jean Louis Teboul
Karim Bendjelid

Reply to the comment by Drs. Cannesson et al.

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We thank Drs. Cannesson et al. for their kind comments regarding our contribution [1]. We fully agree with these authors that pulse oximeters use digital signal processing to make accurate measurements in clinical conditions that were otherwise impossible (e. g., patient motion, low perfusion, electrical interference). The highly processed waveform is the resultant of an enhancement of the input signal through a method called filtering which consists of some transformation of a number of surrounding samples around the current sample of the input or output signal. Therefore it is of major importance to be as precise as possible regarding the way in which the signal is recorded and analyzed since the plethysmographic waveform may have an additional nonrespiratory, low-frequency fluctuation (Mayer waves) [2]. Cannesson et al. also emphasize that the signal quality index and the perfusion index both impact the waveform [3, 4]. The concerns underlined by the authors regarding the influence of vasomotor tone on the plethysmographic waveform specially in patients receiving norepinephrine are addressed in our manuscript. Finally, one of the authors of our study has already considered that the way in which the data are recorded and analyzed should be standardized in order to isolate and quantify the required piece of information [5].

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M. Feissel
Centre Hospitalier, Intensive Care Unit, Belfort, France

J. L. Teboul
Paris Sud Medical School, Réanimation Médicale, Bicêtre Hospital, Le Kremlin Bicêtre, France

K. Bendjelid (✉)
Geneva University Hospitals, Intensive Care Unit, Department of Anesthesiology, Pharmacology and Intensive Care, 1211 Geneva 14, Switzerland
e-mail: karim.bendjelid@hcuge.ch
Tel.: +41-22-3827460
Fax: +41-22-3827470